

AMENDMENTS TO THE CLAIMS:

Please further amend Claim 18 and add Claims 19-28 as follows. Note that all the claims currently pending in this application have been reproduced below.

1-17. (Canceled)

18. (Currently Amended) A diffraction optical element in which a plurality of diffraction gratings formed of at least two kinds of materials having different dispersions are laminated, comprising:

a first diffraction grating which is formed with a material of a predetermined dispersion, wherein an imaginary surface including tips of grating portions of said first diffraction grating is a curved surface; and

a second diffraction grating which is formed with a material of a dispersion different from that of said first diffraction grating and arranged with an interval an air layer between said first diffraction grating and said second diffraction grating, wherein an imaginary surface including tips of grating portions of said second diffraction grating is a curved surface,

wherein the pitches at positions of tips of corresponding grating portions of said first and second diffraction gratings are equal over the area of use, and wherein said first and second diffraction gratings are disposed via an air layer.

19. (New) A diffraction optical element according to Claim 18, wherein substrates on which said diffraction gratings are formed are joined together in a non-grating area of each of

said diffraction gratings.

20. (New) A diffraction optical element according to Claim 18, wherein at least one of said laminated diffraction gratings has at least one diffraction grating differing from it in the direction of the grating shape of the grating portion.

21. (New) A diffraction optical element according to Claim 18, wherein a wavelength area used is a visible range.

22. (New) A diffraction optical element according to Claim 18, wherein at least one of said plurality of diffraction gratings is such that the material forming said diffraction gratings is the same as the material forming a substrate on which said diffraction gratings are provided.

23. (New) A diffraction optical element according to Claim 22, wherein said substrate has lens action.

24. (New) A diffraction optical element according to Claim 18, which is formed on a cemented surface of a cemented lens.

25. (New) A diffraction optical element according to Claim 18, wherein said plurality of diffraction gratings are laminated so that the diffraction efficiency of a particular order may heighten in an entire wavelength area used.

26. (New) An optical system using the diffraction optical element according to Claim 18.

27. (New) An optical system according to Claim 26, which is an imaging optical system.

28. (New) An optical system according to Claim 26, which is an observation optical system.